

7. To prove how successful the above plan has been, I should here add that I have brought fish alive from Port Blair to Calcutta that had at least been three months in the same water, and the latter was as fresh as possible up to that time.

Observations on a few Species of Geckos alive in the possession of the author.—By LT.-COL. R. C. TYTLER.

[Received 27th March, 1864.]

Port Blair, 1st January, 1864.

On several occasions lately, interesting living specimens of Geckoid Lizards have been brought from the jungles, which has induced me to make an attempt to keep them alive, for the purpose of observing their habits more closely, than appears generally to have been done; in order to accomplish this object I have been obliged to resort to many expedients, and the only one that has proved successful has been the following: I have had a great many boxes made of light deal wood, two sides of which are glass: the wooden portion is perforated with holes in every direction, so as to admit of air passing freely through: one of the glass sides forms a slide to allow of the box being opened when an animal is put into it; at one end of the box is a small tin trough for water, similar to that used in Canary cages and at the bottom there is an inch of clean sand: a small branch put into the box for the use of Arboreal species, completes the arrangement, the tin for water is always kept full, and a number of living flies, or young cockroaches are kept loose in the box, and I find that this is sufficient for all the requirements of these Lizards.

My boxes vary in size, but the most convenient are 10 inches by 6, and two inches wide, or 6 inches by 4, also two inches in width; but as the glasses are liable to accidental breakage, I have in a measure contrived to provide for and meet this, by having a separate light wooden box made, capable of holding six of the glass cases: this not only protects the glass, but keeps the freshly caught animal quiet, from being in the dark, and undisturbed, which it greatly prefers; and prevents the restlessness it shews on such occasions in the light.

Without in any way wishing to question the existing classification of saurian animals adopted by naturalists, I feel in the present

instance, while studying the forms, and closely examining the habits of the geckos now alive in my collection, that it is incumbent on me simply to adopt the genus *Gecko*, for every species in the family, rather than place them in the several genera, enumerated in modern classification. Geckoid lizards bear a strong similarity to each other, and are in themselves unmistakable. One specimen alone is almost sufficient to mark the entire type, notwithstanding that on comparing species, one with another, a marked difference is visible, quite sufficient to distinguish species, but insufficient in my opinion for a division of the genus *Gecko* into genera, to meet alterations caused by size, or slight differences of form. I have therefore adopted the genus *Gecko* for all these lizards in my collection, whose habits I have lately been enabled to observe closely. The word *Gecko*, is evidently taken from the sound, uttered by very many of the species, in which 'yecko,' or 'gecko,' or 'chucko,' is distinctly audible. From the formation of the pupils of their eyes, it will at once be remarked, that they are more or less nocturnal in their habits. In many the pupil strongly resembles that of a cat, when much contracted. In the day, it is contracted to a fine dark hair line, but this is only the case with those which are most nocturnal; others again which are diurnal in their habits, preserve the fullness and rotundity of the pupil in ordinary strong lights: this is the case with my *Gecko chameleon* (*Phelsuma Andamanense* of Blyth,) a very beautiful species, peculiar to the Andamans, where it is found in great abundance. The pupil of this species remains round in all lights, and is intensely black; whereas, in my *Gecko pardus*, which, I think, may prove to be *Hemidactylus coctœi* auctorum, the irides, which are of a peculiar bronze and very metallic hue, shew during the day simply a very fine vertical hair-like pupil. Almost all the other small species have the same, but in *Gecko toucktay* of mine, which is *Platydaactylus verus*, the irides, which are of a yellowish green, instead of having by day-light a hair-like contracted pupil, have five or six minute unconnected dots vertically arranged, which, on the reduction of light, rapidly increase and connect themselves, forming in the dark a full pupil. This latter I ascertained from a gecko that had died in the dark, the pupil of which I found to be fully developed and round. Geckos seem to (feed entirely on insects;) the localities which they frequent therefore, are those best suited to the description of insects they feed on, for capturing which, nature

has given them remarkable peculiarities, admirably adapting them for capturing their prey. I allude to the extraordinary power they possess of changing their colours, so as to adapt themselves to the various localities which they frequent, and by which their complete concealment is effected. In *Gecko Chameleon* for instance, (when in dark places, or in the earlier part of the day, the colour is almost black with red markings, and this remains under ordinary circumstances till nearly mid-day, when a gradual change takes place, and the dark hue gives way to an intense emerald green on the body, with a bright blue on the tail, the under surface becoming of a fine canary yellow, and the red marks still remaining on the back. By one or two o'clock, the change of colour is complete, and the animal sallies forth from his dark place of concealment, on to the bright green leaves of trees, in quest of insects: but the change of colour may take place at any time during the day, according to circumstances of position and light; for if one of the green coloured lizards be placed in a dark spot, the colour changes to a dark hue, in the same ratio that the dark animal becomes green when placed in the sun, or in a strong light on the leaves of trees. The change of colour is also influenced by the seasons, for during the rains the change is not so rapid as it is in brighter weather.)

The casting of the skin is of frequent occurrence with all the Geckos, but particularly so with *Gecko Chameleon*, and, strange to say, other lizards in the same case, devour the skin as soon as it is cast: in many instances I have even seen them tear it off before it was fairly changed. All Geckos are great water-drinkers; they drink by lapping with their tongues like dogs; it is therefore very necessary to keep the little tin trough in their cage constantly supplied with water. Insects should also be kept in their boxes to satisfy their voracious appetites. Though insect-eaters, and at times greedy and voracious, still they are capable of enduring hunger for a considerable length of time, without seeming to suffer any inconvenience from it. One of the most marvellous traits in the habit of the Gecko, is its power of frequently and most rapidly changing its colour, and also its markings, to suit the places it may be in; I have seen an animal become, from a light straw-colour, speckled all over with dark marks; and perhaps in another instant of time almost black or a light slate. (No chameleon can change more rapidly or perfectly than the gecko.) In *Gecko chameleon*, the change is more apparent and striking, owing simply to the contrast between an almost

black color and a brilliant light emerald green, but this change is not more remarkable than that which takes place in the more humbly coloured species; for in many, not only the general colour changes, but brilliant markings suddenly appear, which were previously invisible. (An animal which is of a dull grey and transparent, and without any apparent markings, when examined in one of my boxes and held up to a strong light, may, when placed in a more subdued light, assume a brilliant tortoise shell hue, or a light straw, or perhaps become nearly black: such extremes and differences in colour are truly surprising.)

Most Geckos have five distinct toes. The thumb is more or less defined, and the toes are furnished with or are without sucking pads, possessing more or less adhesive powers; those which have the pads less developed, or confined to the tips of their toes, find greater difficulty in ascending plane vertical surfaces than those which have the suckers fully developed. In some of the small species which frequent walls, a membrane unites the toes, while others possess membranes on the sides of their tails, heads and bodies; according to which characters the group is separated into several genera. A peculiarity in the claw of the gecko is its powerful retractility, which in some species is not confined to the claw, but is in a great measure possessed by the entire toe: the sucking pad is even capable of reduction, either by a folding process or an internal retraction. Another strange peculiarity is in the eye, which is furnished with a transparent case, behind which, the eye moves freely and rapidly.

In casting their skins, the portion over the face draws off from the nose towards the *occiput*, leaving the case of the eye, in some, unchanged. This, it will be perceived, is different from the process which obtains in the case of a snake when casting its skin, for in the latter case, the case over the eye is invariably renewed with the skin. I have already alluded to Geckos being entirely insect-eaters, and they are active insect-destroyers; but for all that, they are remarkably choice in the selection of their prey, as they may be seen for a considerable length of time, perfectly motionless on a wall, watching some particular insect they may have selected for their food; and they will, in the meantime, allow numbers of others to pass their very mouths, without making the slightest effort to secure them. Flies and cockroaches form a very favourite food, but the insect must be alive, or they will not touch it.)

In collecting lizards, I always send natives out with wide mouthed bottles to put them into when caught, but this, simple as it appears, requires a little management and caution, for should a cork be put into the bottle, the animal is apt to die from suffocation, and putting too many in a bottle, causes perhaps the destruction of the whole; besides which, it often occurs, that a lizard may adhere to the side of the bottle, and shew great disinclination to quit it; the violent shaking then resorted to, to oblige it to do so, frequently causes the animal to die in a few days from its injuries it suffers. I find it is also a bad plan, to allow an injured gecko to be with others, for the skin being once rubbed off, the surface remains raw and tender for some considerable time; and the result too frequently is, that small ants are attracted, who will completely destroy a box of geckos in a night, by adhering to every one they can get hold of, and stinging it to death. This has happened to me on several occasions, and caution is required to guard against it, for the gecko, though an insect-destroyer, is a very timid animal, and rapidly flees from the attacks of insects.

(During the day, geckoid lizards are found under stones or in boxes, and other suitable localities, but at night, a lamp near a wall will always attract them, whilst the insects fluttering about will always induce them to remain about the spot. Many of my most interesting specimens have been obtained in this manner. On such occasions, it is not unusual to observe, the interesting, though at the same time, somewhat cruel habit of the larger sized geckos, destroying the smaller ones; and it almost invariably occurs, that if a large gecko is gently driven towards a small one, whilst on a wall, he almost immediately seizes the other, and a scuffle ensues, which ends either in the total destruction of the smaller one, or at all events the loss of his tail. Nature appears to have provided against this act of cannibalism amongst them, for the tail is easily detached, and although it becomes the trophy of the larger animal, its loss frequently enables the smaller one to escape with his life. The tail when detached, from a most sluggish appendage, becomes a very lively member, and owing to a powerful muscular action, wriggles about for a very considerable time. In about three weeks the tail is renewed on the tail-less animal. From the readiness with which the tail is detached, it almost appears that its rejection is voluntary, and resorted to to aid its possessor in escaping from imminent danger; but this can hardly be the case, for

it often happens that the renewed tail is deformed, either by being thicker at the junction, or, in many instances, by several tails branching off from that one spot.

The toe-pads or suckers are a perpetual source of care and attention to these little animals, who constantly keep licking them with their fleshy tongues, and removing all impediments to their adhesiveness; this takes place from the moment they are caught; the mere act of catching them appears to derange, in some measure, the regularity of their suckers; for (when first captured, the animal remains perfectly quiet, as if astonished or paralysed, but on recovering from the effects of his surprise, he licks his pads, examining them minutely, and struggles violently to escape, and even endeavours to bite his captor;) which latter, should he succeed in doing, is of but little consequence, as his bite is not in any way venomous.

The *Gecko toucktay* is considered by the Burmese, to be poisonous, though unfoundedly; and therefore (this harmless lizard is looked upon with dread and alarm, though, strange to say, his startling and somewhat unearthly call, uttered on a dark still night, from some densely wooded spot, or interior of a house, creates little or no annoyance. The call of the *toucktay* is a frequent repetition of the word 'touck tay,' uttered in a hoarse sonorous and loud tone, repeated five or six times, and ending in a suppressed groan, as if his efforts were entirely exhausted.

Though some few geckos are more or less furnished with an interdigital membrane, bearing the appearance of a swimming web, I have never seen them voluntarily take to the water, but they confine themselves to trees, rocks and houses. It is possible, however, that during heavy rains, when water accumulates in different places, these animals may have to swim in order to save their lives, in which case these membranes must materially assist them in so doing.

Geckos preserved and sent to museums in spirits for scientific purposes, undoubtedly answer all that is required for the examination of their structure, but as most of them have the power of changing their colour, and as in many instances preserved specimens lose some of their peculiarities, I find that to study and form an idea of the habits of these little creatures, it is necessary to examine and watch them in their living state, when they will be found to afford a highly interesting study, very astonish-

ing, and of a very pleasing nature. The larger *saurians*, from their imposing size, have rendered themselves familiar to many, but the little gecko has seemingly been neglected, though constantly put into bottles indiscriminately, and sent to museums with little or nothing said about its habits, beyond a casual remark of its being found on walls or trees, and apparently an insect-eater. In reality little or nothing is known of the habits of Geckos, and these can only be ascertained by taking an interest in these minute creatures, and keeping them in a glass box for constant examination.

The *Gecko toucktay* is a (very savage animal when first caught; and as he dashes with the greatest ferocity to bite his captor, his huge gaping mouth and ferocious) aspect render him a somewhat alarming as well as forbidding animal to look at, notwithstanding the pretty red, white and slate-coloured markings he has over his body.

I find that *Geckos* which have spines on their tails, on losing the tail and the same being renewed, have the newly formed tail smooth for a considerable length of time, nor do the spikes appear for at least three weeks or a month after its formation. When at rest, the gecko coils his tail, so as to be entirely concealed in the crevice or other place he happens to be in; but when in search of food, or disturbed, the tail remains at its full stretch, and in a certain measure assists him in adhering to walls or other places, as well as to guide him in his movements. When a gecko loses his tail, he appears to be much inconvenienced by the loss, for instead of creeping gracefully and leisurely as he generally does, his movements become short leaps, or a succession of rapid running jerks with his head elevated.

On seizing an insect, (the gecko does not use his tongue, but seizes his prey with his jaws, and after a few bites and gulps swallows it without tearing it to pieces.) The tongue of the gecko is large and fleshy, and rounded or notched at its extremity, which is free. The teeth, which are very small, are sharp with cutting edges, and numerous, adhering to the internal margin of the jaws, but there are no palatine teeth. A curious and somewhat strange peculiarity in these lizards, is that (on being caught they pass a quantity of urine, which is evidently not the result of alarm, but it seems as if this is resorted to for the purpose of aiding them in their escape when seized by other animals.) The liquid is quite clear, and although plentifully passed on the seizure of the animal, it is often ejected when not

disturbed. That this liquid is capable of producing sores on a tender skin, I doubt not; for when my fingers have been touched by it, on several occasions, I have felt an unusual caustic sensation and even a tingling at the tips, which after the lapse of a few minutes entirely passes away.

In a *gecko toucktay* brought to me at Moulmein, and which had been put alive into a dry bottle, I was astonished to see the amount of moisture collected in the bottle in a few hours, as well as the water which seemed to be coming through the pores of the skin; for though the greatest portion had been passed during the night, moisture was still passing through the pores of the skin in the morning.

I find whenever my specimens of the *gecko tidæ* are (in bad health or about to die, a gradual wearing away is visible; the neck becomes very thin and dilated, the head looks unusually large, the lips swell and become sore, the eyes much projected; particles of dust also adhere to the transparent, immovable eyelid, and about the corners of the mouth, which latter often fills with dust; when this occurs they seldom or ever recover.) The presence of dust on the immovable eyelid, is in itself a marked indication of approaching death, for (geckos constantly lick it with their tongues, and keep it scrupulously clean when in health.) The living animals in the same box do not in any way seem to shew repugnance at the presence of a dead companion, but move about it, or cluster around it precisely as if it were alive. The clustering of these animals, when not confined in a box, is not unusual, for I have found several concealing themselves in the same crevice, where they sometimes lay one over another. In my glass cases this is a frequent occurrence.

I have already remarked on the constant casting off of the skin, on the part of the *Gecko chameleon*, and although it is less frequent with others, still they all cast their skins often, and in the glass boxes this would appear to occur more frequently than elsewhere: the confinement may perhaps in some measure influence the act, and promote a more rapid change; before it takes place, the animal becomes unusually languid and of a grey slate colour, appearing in certain lights of a whitish hue. (As the time of casting approaches, the grey colour becomes darker and duller, all markings disappear, and the skin begins to crack and fall off, either in one or several long pieces; that of the tail being the last, which slips off like a long sheath. Other *Geckos* in the same box, attracted

by the pure white appearance of this cast off coat, seize and eat it. (The skin is of a pure white, beautifully netted and marked, strongly resembling that of snakes. No sooner is the skin cast off, than the little creature becomes quite lively again.) A *touchtay* which I had, commenced casting its skin in one of my boxes, two or three days after its capture; on the third day the skin cracked and as usual began to peel off. On this occasion, it was nearly a week getting rid of its skin, but for all that, I do not think it was in any way weakened by the operation, as might reasonably be expected from the animal's sluggishness and refusal of all food. I have observed that geckos on touching shining or polished surfaces, invariably lick them with their tongues, probably mistaking them for water, but the *gecko chameleon* does the same to the small shining particles of sand.)

The contraction of the eye of these lizards is remarkably cat-like, but in *gecko touchtay*, it is more remarkable than in any other, from the peculiar greenish hue of the iris, which is so markedly different from the brass bronze lustre, or brown hues of the smaller species. When the mouth of the *touchtay* is open, it is truly hideous, the inside appearing like a deep pink cavern, with the palate black. Although this is equally descriptive of the smaller lizards, it is most striking in the larger ones. Although the *gecko touchtay* is (vicious and furious, it soon becomes reconciled to confinement, and does not attack or bite others of the same species,) when put into the same box. This huge gecko adheres to a wall, or the perpendicular surface of a pane of glass, as firmly and as securely as the smaller animals, and is almost more tenacious of its hold, requiring a strong shove or even stroke to knock it off a wall: (during the day this animal adheres to a wall or tree with his head downwards, or frequently hangs by his hind feet, with the head down and the front feet clasped together.

Other *saurians* may in a great measure be able to cling to, and ascend vertical surfaces, but the power of adhering to such places like a fly, with suckers, and to traverse ceilings with the greatest facility and rapidity, where no other lizard dare venture, belongs exclusively to the gecko. This is effected by means of their flattened and expanded toes, which are transversely laminated beneath, or furnished with powerful imbricated suckers; and by its claws, which are sharp-hooked and retractile like a cat's, and greatly assist the suckers in

Reaction
touching
surface

their hold : for they have a clinging capability, which, when added to the suction of their toe-pads, gives the animal a surprisingly powerful hold, the toe-suckers acting in reality like minute air-pumps. I have lately lost a beautiful specimen of the *gecko touchtay*, which, previously lively and active, died suddenly. On a *post mortem* examination, I found in the stomach, an oblong piece of a substance like lime, the size of a marble, and as hard as a stone, and which had evidently caused its death. It is possible that since so many species of the smaller geckos inhabit the same place, hybrids may be of frequent occurrence ; and this I have had reason to suspect in many instances : but although several species of geckos may inhabit the same locality, yet, as a general rule, they keep separate and aloof from each other ; for instance in a house, the dark cellars may be the resort of one species, the roof of another, and crevices in the walls may be occupied exclusively by a third species. However, at night they issue forth in quest of insects, and may be found mixed up together in the same spot, but on the slightest disturbance, or when they have done feeding, they return hurriedly to their particular hiding-places.

(Two eggs of a perfectly round and milk-white colour seem to be the most they lay. These lie about chinks in the wall, unprotected till hatched, which process takes place according to temperature and other circumstances. When the eggs are first laid they are soft, and covered with an adhesive glutinous substance, which causes the eggs to stick to any surface, as well as frequently to each other. Shortly after the eggs are laid, the shell and gluten become perfectly hard, and were it not for this admirable provision of nature, these light minute eggs, would be blown about by every breath of wind, and their hatching would be rendered almost an impossibility, particularly so in the localities their parents intend the young to inhabit.) The power the geckos possess of introducing themselves into minute crevices, is owing to the natural flexibility of their bodies, the formation of which is depressed, and covered with imbricate scales or tubercles, and frequently spines like prickles, on the tail as well as on the body. Femoral pores exist in the males or in both sexes, but there are several species in which no indication of these pores can be found. Besides the immoveable case which covers the eye, and behind which the eye moves freely, there is a slightly developed regular eyelid, which, from its incomplete formation, gives a staring glance to the animal, for the eye is itself naturally

very large, full and bright. The orifices of the ears are on the side of the head, with the membrane of the tympanum much depressed.

I have already said that in my classification of the living geckos in my collection, I should simply adopt the genus *Gecko* in preference to the acknowledged genera, but as this may not be satisfactory to others, I will here briefly classify the geckoid saurians. Their position in the zoological series is in the second section (*haplapnoa*) of the class *reptilia*; in the order *saurii*, tribe *squamati*, and family *ascalobotæ*. This family, in my opinion, admits of only one genus, *Gecko*, but owing to the structure of the feet, the toe-suckers of which vary considerably in form, and are quite a study in themselves, the geckos have been divided into several genera, the principal of which I shall here enumerate.

<i>Lomato-dactylus</i> (Van der Hoven),	<i>Leiurus</i> (Blyth),
<i>Platy-dactylus</i> (Cuv.),	<i>Sphæriodactylus</i> (Cuv.),
<i>Pteropleura</i> (Gray),	<i>Diplodactylus</i> (Gray),
<i>Hemidactylus</i> (Cuv.),	<i>Ptychozoon</i> (Kuhl.),
<i>Ptyodactylus</i> (Cuv.),	<i>Crossurus</i> (Wag.),
<i>Phyllodactylus</i> (Gray),	<i>Stenodactylus</i> (Fitz.),
<i>Thecadactylus</i> (Dum.),	<i>Gymnodactylus</i> (Spix.),
<i>Phelsuma</i> (Coct.),	<i>Tarentola</i> ,
<i>Rhacodactylus</i> (Fitz.),	<i>Phyllurus</i> ,

and a great many more, but I think the above may be considered the most important of those hitherto acknowledged: but without specimens of the animals or good illustrations, which latter these brief observations of mine do not admit of, it is totally impossible for me to describe, or convey any idea of the peculiarities existing in the formation of the suckers of the several species.

I will now describe each of my living specimens separately. It is possible that some of them may have been described already, but as I am not aware of any such description and have no means of reference, I will name each myself and give a brief description of it.

1. *Gecko verus*; length 9 to 12 inches; general colour, dark slate with light ash coloured bands round the body; the light bands are spotted with white, and the dark slate with red spots. The tail is of the length of its body with bands all round it of light and dark slate, divided by dark red or nearly black bands. Irides greenish yellow, large and full of veins. Body compressed, with rough tubercles on the surface, as also on the tail, of a small size. The males are darker than the females, and

also larger.) Toes five, of nearly equal size, furnished with powerful suckers. Head large: pupil of the eye with powerful contracting powers: the eye is large and staring. Inside of the mouth red. Very vicious and bites with great ferocity: inhabits Burmah: my specimens are all from Moulmein. Found in houses, trees, &c., and called by the Burmese *Toucktay*, [*Platydactylus verus* of authors]. The Burmese name is in imitation of its call, which is five or six times repeated.

2. *Gecko Verreauxi*, n. s., Tytler; a splendid large new species found on the main island of the Andamans, as also on the smaller. In size it not only equals the last named species, but is frequently larger, measuring from 13 to 14 inches in length. I have named it after my esteemed friend *M. Jules Verreaux* of Paris, the great and well known naturalist. The *Gecko Verreauxi* is of a dark brown colour above and lighter beneath: those sent to me from Mount Harriet have little or no marking, but those from Aberdeen have dark markings on the back, and sometimes circles on the tail. The body is covered with tubercles, and there are six rows of prickles or spines on the tail; which latter is flat sided. A deep groove runs down the centre of the tail, which is as long as the body. There are two rows of these spines on the top and two on either side of the tail. The animal, in colour, is so like the bark of an old tree or dried wood, and so changes its brown hue to suit the colour of the tree it may be on,) that it is a matter of the greatest difficulty to find it. (The animal has a very formidable and forbidding look, and the natives greatly dread it, so that it is difficult to obtain.) The colour of the irides is a metallic yellowish green, full of veins; the eyes are large and full. Each foot has five large toes with powerful claws and large suckers. The call of this species is a loud 'Tuk Tuk Tuk' five or six times repeated.

3. *Gecko tigris* (Tytler). I think this is the *Puellula rubida* of Blyth, for the character which induced him to give this generic name to a gecko he received from the Andamans, is perceptible in all my living specimens: I have called it *tigris* from its fierce disposition. In length it is from 5 to 6 inches: general colour brown with numerous dark markings, and rings round the tail: the markings are in the shape of lines. The tail is longer than the body, and when the animal is moving, the tail is held up horizontally and stiff, with a curl at the tip: the back is rough with tubercles, as also is the tail. The under surface is fleshy and smooth and of a purple hue. The upper eyelid with a yellow line on it:

irides of a brownish green. Toes with very minute suckers, scarcely visible, appearing as if none existed: toes five on each foot, long and nearly equal. The colour of the animal is very changeable; a dark variety with deeper markings has been brought to me from Mount Harriet. The species appears to be peculiar to the Andamans, where it is found under stones, stumps of trees, &c.

4. *Gecko Tytleri* n. s. (Tytler); from 4 to 6 inches long; body and tail rough, covered with small tubercles; the tail has also spines on it. Toes five; the thumb small; suckers on the toes small. General colour brown, lighter on the under surface; colour very changeable. Irides brown. Found all my specimens in dark cellars at Moulmein, where the species is common.

5. *Gecko chaus*, (Tytler). I think this is *Hemidactylus frenatus* of Schl. Length from 4 to 5 inches; tail as long as, or longer than body. General colour slate grey, lighter on the under surface; colour very changeable; body smooth with dark marks; tail with spines. Feet with five toes; thumb small; suckers on toes of moderate size. Irides brown. Found on trees, in houses, &c., at Moulmein and Rangoon: those found at Rangoon are somewhat smaller than those from the former place, and a slightly darker variety.

6. *Gecko caracal*, n. s., (Tytler); very similar to the above, but without any spines on the tail; (found in dark cellars, but chiefly in native huts) at Rangoon. Length about 4 inches. At first from its great similarity to No. 5, *Gecko chaus*, I was inclined to think it was simply a local variety of that animal, but I now feel satisfied it is not so, but a distinct species. It can at once be distinguished from *Gecko chaus* by the absence of prickles or spines on its tail, this latter being perfectly smooth in *Gecko caracal*.

7. *Gecko pardus*, (Tytler); length from 4 to 5 inches; body much compressed; tail flat, thick and fleshy at base, passing off to a fine point. Body dotted with light spots, margined with minute dark spots and specks; general colour brown, very changeable; lower portions lighter, without marks. Irides metallic yellow like brass. Toes five, full size, connected by a membrane; suckers full size. A great variety of markings found in different individuals. Found in houses at Rangoon, Moulmein and Port Blair: those obtained at Port Blair have a thicker tail than those I collected in Burmah. I am of opinion that the Port Blair

animals have been introduced into the settlement in boxes, &c., from Burmah, for I have hitherto only obtained them on Ross island, and not from the main island. I do not think this can be a new species, for it is very common.

8. *Gecko Harrieti*, n. s. (Tytler). This beautiful little Gecko varies in length from 2 to 3 inches. Its general colour is light brown, with particularly pretty, dark markings: a dark mark extends from the nose along the sides, but the colour is so very changeable that it is impossible to describe it: from a light straw, it instantaneously becomes almost of a dark brown. It has five well developed toes, with full sized suckers under each. Irides bright copper colour. Tail equal in length to body. Under portions lighter than upper, without markings. (The tail is curled when at rest.) It is perfectly arboreal, frequenting trees, and is found concealed under the bark: inhabits the Andamans; all my specimens are from Port Blair and its neighbourhood. I have named it after Mrs. Tytler.

All the Geckos which I have described above, have pupils which contract like those of cats, and are more or less nocturnal in their habits; but the following species is quite diurnal, and the pupil does not seem to contract, but remains round and full all day.

9. *Gecko chameleon* (Tytler.); (*Phelsuma Andamanense* of Blyth); about 4 to 6 inches long: general colour, in the sun or strong light, rich emerald green, with blue or green tail; under portions bright yellow; red marks on head and back in most individuals; in dark places or in a subdued light, the colour is perfectly dark, nearly black; the markings slightly visible and the yellow usual on the under portions entirely disappears. These lizards are quite arboreal. Feet with five toes; thumb very small; suckers of moderate size: tongue bright red. Peculiar to the Andamans, where the species is very common.
